UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/972,582	10/05/2001	Sarvajit Chakravarty	219002028402	4932

25225 7590 11/15/2002

MORRISON & FOERSTER LLP
3811 VALLEY CENTRE DRIVE
SUITE 500
SAN DIEGO, CA 92130-2332

EXAMINER	
LIU, HONG	

ART UNIT	PAPER NUMBER
1624	9

DATE MAILED: 11/15/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)
09/972,582	Chakravarty et al.
Examiner	**Art Unit**
Hong Liu	1624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____

2a) ☐ This action is **FINAL.** 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1, 8-10, 13, 15-20, and 23-33* is/are pending in the applica

4a) Of the above, claim(s) *18-20 and 25-33* is/are withdrawn from considera

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1, 8-10, 13, 15-17, 23, and 24* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirem

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claims 1, 8-10, 13, 15-19, and 22-33 are pending in this applicant.

Election/Restriction

1. Applicants' election of Group III subject matter with traverse in Paper No. 8 is noted. The traverse is found partially persuasive. Accordingly, all the methods claim wherein Z3 is N will be examined together. The composition claims will not be joined because these claims are in essence directed to a product. With regard to the separation of product from process of use, MPEP. 806.05(h) permits restriction when more than one utility can be shown to exist for the product claimed. In the instant case, although claim 18 recites one intended use of the composition, the intended use is not given material weight (see In re Tuominen 213 USPQ 89). Thus, the composition containing the compounds is a general compositions that can be used to inhibit tyrosine kinases other than P38 kinase.

For the above reasons, the restriction between composition and methods of use of the compounds is still deemed proper and is therefore made FINAL.

2. Claims 18-20 and 25-33 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 8-10, 13, 15, and 23 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The following reason(s) apply:

The claims are not commensurate in scope as to the possibilities for the substituent "cyclic aliphatic," "cyclic heteroaliphatic," "monocyclic or polycyclic aromatic moiety," "a divalent moiety that provides a distance of 2-8A between ring B and Ar1"in the various R, L, Ar definitions. The specification has no definition for "cyclic aliphatic" and "cyclic heteroaliphatic" and, therefore, they are open-ended and all encompassing. The specification does not enable any person skilled in the art to make and use the invention commensurate in scope with these broad claims, which embrace a diversity of hetero and aryl rings at various locations on the quinazoline ring.

In evaluating the enablement question, several factors are to be considered. Note In re Wands, 8 USPQ2d 1400 and Ex parte Forman, 230 USPQ 546. The factors include: 1) the nature of the invention, 2) the state of the prior art, 3) the predictability of lack thereof in the art, 4) the amount of direction or guidance present, 5) the presence or absence of working examples, 6)the breadth of the claims, and 7) the quantity of experimentation needed.

The nature of the invention in the instant application has claims which embrace a diversity of chemically and physically distinct compounds, wherein R3 is a substituted or unsubstituted moiety containing one or more heteroatoms selected from O, S and N, and R3 or Ar is a single or fused, aromatic or an unsubstituted or substituted, fused or single, heteroaromatic group, containing one or more heteroatoms, L is etc. While some compounds are disclosed, there is insufficient guidance for preparing additional p38 inhibitor which would be effective since the cited examples are drawn to a homogenous group of compounds not remotely commensurate in scope to applicants' claims. Only compounds wherein R3 is optionally substituted phenyl, pyridyl, naphthyl, Ar' is pyridyl, pyrimidyl, optionally substituted phenyl, morpholine, piperidine, pyrazine have been made.

Furthermore, limited testing data is provided for compounds wherein ring A contains one or two nitrogens. Examples should be of sufficient scope as to justify the scope of the claim. However, the generic claims are much broader in scope than is represented by the testing. The definitions of the various R and Ar variables on the quinazoline ring system embrace many structurally divergent groups not represented at all in testing, since testing for the instant compounds is not seen in the specification. Markush claims must be provided with support in the disclosure when the "working examples' fail to include written description(s) which teach how to make and use Markush members embraced thereby in full, clear and exact terms. See In re Fouch, 169 USPQ 429.

This area of activity can be expected to be highly structure specific and unpredictable, as is generally true for chemically-based pharmacological activity. In view of the structural divergence in the claims, one skilled in the art could not reasonably extrapolate the activities of some of the claimed compounds to the other structurally divergent compounds embraced by the claims which have not been tested. In cases directed to chemical compounds which are being used for their physiological activity, the scope of the claims must have a reasonable correlation to the scope of enablement provide by the specification. See In re Surrey 151 USPQ 724 regarding sufficiency of disclosure for a Markush group. No reasonable assurance has been made that the instant compounds as an entire class have the required activities needed to practice the invention. Thus, factors such as "sufficient working examples", "the level of skill in the art" and "predictability" have been demonstrated to be sufficiently lacking in the instant case for the scope being claimed.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 8-10, 13, 15, and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The following reasons apply:

4. 1).The term "substituted or unsubstituted" or "optionally substituted with 1-3 substituents" throughout claim 1 is unclear as to the nature and number of substituent(s) intended.

2). The use of "cyclic aliphatic" and "heteroaliphatic" in the definition of Ar is unclear to the array of heteroatoms, size of the rings, as well as nature of atoms as ring members. See In re Wiggins 179 USPQ 421 for certain terminology regarding heterocyclic ring systems.

3). Claim 17, first compound on page 14, recites the limitation of cyclopropyl at 2-position of quinazoline. There is insufficient antecedent basis for this limitation in the claim.

4). Claim17, last compound on page 14, recites the limitation of HO-NH(O). There is insufficient antecedent basis for this limitation in the claim.

5).Claim17, second compound on page 19, recites the limitation of NCH3CH3. There is insufficient antecedent basis for this limitation in the claim. Ar is a cyclic group.

6).Claim17, first compound on page 26, recites the limitation of two quinazoline ring systems. There is insufficient antecedent basis for this limitation in the claim.

7). The scope of "alkyl", "arylalkyl", "alkenyl", etc. as recited in claims 1, 8-9, and 15 for the definition of various R reads on carbons of non-limiting length. Long chains would be difficult to prepare and may be too insoluble for instant use. See In re Hawkins 179 USPQ 157 regarding carbon radicals that have unlimited chain lengths and ring sizes in the specification.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 8-10 are rejected under 35 U.S.C. 102(a) as being anticipated by Alvi et al., Chem Abstract 130: 306613. The instantly claimed compounds read on the reference compound, see the enclosed copy of CAPLUS computer search report and the compound having RN 165806-61-1. overlap

Claims 1 and 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by de Laszlo et al., Chem Abstract 130: 90069. The instantly claimed compounds read on the reference compound, see the enclosed copy of CAPLUS computer search report and the compound having RN 188352-47-8. overlap

Claims 1 and 8-10 are rejected under 35 U.S.C. 102(a) as being anticipated by Anantanarayan et al., Chem Abstract 130: 38377. The instantly claimed compounds read on the reference compound, see the enclosed copy of CAPLUS computer search report and the compound having RN 216507-23-2.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alvi et al. (WO 99/18942). The reference teaches a generic group of compounds which partially embraces applicant's instantly claimed compounds. See formula I, Col. 5 wherein R1 is optionally substituted quinol-4-yl, isoquinolinyl, and quinazolin-4-yl and the core is an substituted imidazole. The compounds are taught to be useful CSBP/P38 inhibitors. The claims differ from the reference by reciting a specific species and/or a more limited genus than the reference. However, it would have nevertheless been obvious to one skilled in the art at the time of the invention to be motivated to select any of the species of the genus taught by the reference including those instantly claimed, because the skilled chemist would have the reasonable expectation that any of the specie of the genus would have similar properties and, thus, the same use as taught for the genus as a whole, i.e., CSBP/P38 inhibitors. One of ordinary skill in the art would have been motivated to select the claimed compounds from the genus in the reference since such compounds would have been suggested by the reference as a whole. It has been held that a prior art disclosed genus of useful compounds is sufficient to render prima facie obvious a species falling within a genus. See *In re Susi*, 440 F.2d 442, 169 USPQ 423, 425 (CCPA 1971), followed by the Federal

Circuit in *Merck & Co. V. Biocraft Laboratories*, 847 F.2d 804, 10 USPQ 2d 1843, 1846 (Fed. Cir. 1989).

Claims 1 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anantanarayan et al. (WO 98/52940). The reference teaches a generic group of compounds which partially embraces applicant's instantly claimed compounds. See formula I, Col. 5 wherein R1, R2, R4 can be hydrido, R3 is quinolinyl. The compounds are taught to be useful to treat P38 kinase mediated disorders. The claims differ from the reference by reciting a specific species and/or a more limited genus than the reference. However, it would have nevertheless been obvious to one skilled in the art at the time of the invention to be motivated to select any of the species of the genus taught by the reference including those instantly claimed, because the skilled chemist would have the reasonable expectation that any of the specie of the genus would have similar properties and, thus, the same use as taught for the genus as a whole, i.e., P38 inhibitors. One of ordinary skill in the art would have been motivated to select the claimed compounds from the genus in the reference since such compounds would have been suggested by the reference as a whole. It has been held that a prior art disclosed genus of useful compounds is sufficient to render prima facie obvious a species falling within a genus.

Double Patenting

7. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful

process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

8. Claims 16 and 24 are rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 6 and 9 of prior U.S. Patent No. 6,476,031. This is a double patenting rejection.

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground

provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claims 1, 8-10, 13, 15, 17, and 23 are rejected under the judicially created doctrine of obviousness-type double patenting over claims 1-9 of U. S. Patent No. 6,476,031 and claims 1-8 of US Patent No. 6,184,226. Although the conflicting claims are not identical, they are not patentably distinct from each other because they contain overlapping subject matter.

Any inquiry concerning this communication should be directed to Examiner Hong Liu whose telephone number is (703) 306-5814. If attempts to reach the examiner by the phone are unsuccessful, the examiner's supervisor, Mukund Shah can be reached at (703) 308-4716. The fax phone number for this group is (703) 308-4734 for "unofficial" purposes and the actual number for **official** business is (703) 308-4556. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose number is (703) 308-1235.

Hong Liu
November 10, 2002

Mukund J. Shah

Mukund Shah
Supervisory Patent Examiner
Art Unit 1624